The impact of management on under-pricing at IPO and subsequent initial stock trading

Farichah Farichah

Accounting Department,
Economics and Business Faculty,
Lampung University, Indonesia
Email: farika.rika@yahoo.com

Abstract: Can a company's management increase company's income prior to an initial public offering (IPO), for example, by hiring an underwriter and an auditor with high reputation? Does this result in under-pricing during the IPO? We study the influence of: 1) earnings management; 2) the underwriter's reputation; 3) the auditor's reputation on under-pricing and trading volume during the stabilisation period. The theoretical underpinnings of this research include agency theory, signalling theory and cognitive bias theory. The initial hypothesis is tested using an independent samples t-test comparing means. Other hypotheses are tested using ordinary least square regression. We find that prior to the IPO, a company's earnings management and the reputations of the underwriter and auditor do influence under-pricing while earnings management does not. Furthermore, under-pricing increases the trading volume during stabilisation period.

Keywords: auditor and underwriter reputation; earnings management; price stabilisation and under-pricing.

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Biographical notes: Farichah Farichah is a Senior Lecturer in Accounting at University of Lampung, School of Economics and Business, Bandar Lampung, Indonesia. She obtained her Doctoral degree in Accounting at the Gajah Mada University, Indonesia, in 2015. Her research areas include financial accounting, auditing, and so on. She has presented her research in several conferences around the world.

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1 Introduction

1.1 Research background

The phenomenon of under-pricing occurs quite frequently in primary markets (Ritter, 1991; McGuinness, 1993). Generally, short-term stock during an IPO experiences under-pricing (Aggarwal et al., 1993). The owners of IPO companies seek to minimise under-pricing. One way to minimise under-pricing is to engage in earnings management (DA) and with an underwriter, attempt to establish the price at IPO.

Dimovski et al. (2004) explain how underwriters and issuers come to under-price IPO stock. In this context, the relationships between the issuer and the underwriter as well as prospective investor are particularly worth noting. These relationships belong essentially to the category of agency relationships (Scott, 2009). In terms of the IPO, relationships of agency exists between the owners (founders) of the company as issuers and the investors, prospective investors, and the underwriter.

IPO dealings are often coloured by the problem of information asymmetry (Beatty, 1989; Ritter, 1991; Leland and Pyle, 1997). Compared to the management of the IPO, investors and prospective investors are usually deficient in terms of information. Therefore, IPOs often provide an opportunity for the manager to deliver overstated earnings reports for the purpose of selling initial stock at a high offer price. The managerial opportunism hypothesis postulates that managers will report high earnings in order to attract a high stock price (Nagata, 2013). However, not every manager has the same motivation to perform DA around IPO. More research is needed on DA with income maximisation prior to IPO.

On the other hand, some research on under-pricing has discredited the hypothesis of managerial opportunism (Ljungqvist, 2007) Under-pricing can increase because of ex-ante uncertainties related to the value of an IPO company. Investors will not buy an IPO with low earnings quality (as a result of aggressive DA) unless the initial stock is significantly underpriced. Since investors face high uncertainties when the quality of earnings is low, the price of initial stock goes down.

Usually, management attempts to signal to investors and prospective investors that the company has high-quality performance by reporting high earnings in their financial statements through DA (DuCharme et al., 2004). Further, invariably, there is some expectation that IPOs in general are underpriced (Boulton et al., 2011). Apart from that, in the process of offering initial stock it is required that other players, such as auditors and underwriters, should be of high reputation. Accordingly, the aim of this research is to answer the question whether there is any relation between under-pricing on primary markets in Indonesia and whether the relationship is influenced by DA prior to IPO or the reputations of the auditor and underwriter.

It is generally recognised that the role of the underwriter is very important (Stoughton and Zechner, 1998). To ensure success in an IPO, the underwriter must maintain the sale price in the secondary market so that it does not decline below its initial price but remains stable for 45 working days from the first day of trading in the secondary market (Lowery and Schwert, 2003).

In any stock market, certain factors affect the behaviours of individuals while making investment decisions (Beaver, 1968). New information can change individual beliefs. The question is how investors behave during IPOs. Are they under-reactive (pessimistic) or over-reactive (optimistic) toward under-pricing? It needs to be researched whether under-pricing at the time of IPO constitutes an effective signal that is capable of influencing the decisions of investors or those of the prospective investors.

One of the conditions that may bias a decision is overconfidence (Statman et al., 2006), a result of self-attribution. Self-attribution is the tendency to make decisions based on existing information and ignoring available public information. Overconfident behaviour can improve trading volume.

In any stock market, there are many investors with all kinds of character traits, e.g., conservative rationality, irrationality and overconfidence. Apart from other factors such as signals provided by the IPO company, e.g., reported earnings in the finance report, the reputation of the auditor and the underwriter used in the IPO process, as well as existing under-pricing phenomena, various personalities and behaviours of investors involved affect the stock trading volume. In this paper, we address this question: does under-pricing influence initial stock trading volume during the stabilisation period?

1.2 Research contribution

This research makes several important contributions in a range of theoretical, empirical, and policy areas from the viewpoints of practitioners and academics.

The theoretical contributions pertain mainly to agency theory including the existence of asymmetry of information, signalling theory and trading volume theory.

The empirical contributions pertain to:

- clarifying whether or not a company should perform DA with income maximisation prior to IPO
- demonstrating the relationships between DA, UNWRI, auditor reputation, and under-pricing
- determining the influence of under-pricing on trade volume during the stabilisation period.

Our contribution to policy studies lies in clarifying standards and accounting methods in implementing regulations controlling underwriters and auditors of IPOs on the primary stock market.

2 Theory and hypotheses

2.1 Information asymmetry and agency theory

Asymmetry of information makes it difficult for investors to assess the quality of an IPO objectively. Asymmetry of information may occur between issuer and underwriter, between investors and underwriter, between investors, and between issuer and investors. Each of these has some self-interest, and the relationships among the interests are determined by agency theory, that is, a model of the process of contract between two or more people, each of whom is involved in the contract while attempting to gain the best outcome for himself of herself (Scott, 2009). In agency theory, there is an assumption of information asymmetry that requires an independent party who will support the flow of information even though it is expensive, in order that all parties gain the benefit of real information possessed by other related parties (Leland and Pyle, 1977).

2.2 Information asymmetry and signalling theory

Signalling theory assumes that there is information asymmetry between managers and investors. Managers have inside information that investors do not. Signalling theory seeks to explain the importance of making information public (Wolk et al., 2006). The information may be in the form of financial reports, company policies and other voluntary disclosures. In the process of IPO, it is usual that a company engages in DA and uses underwriters and auditors with high reputations to reduce information asymmetry.

2.3 Trading volume and cognitive bias theory

Individual behaviour during decision-making is influenced very much by information that is available. Therefore, information can change someone's beliefs. Beaver (1986) states that decision-making behaviour will change when new information is received. While processing the information, investors tend to act heuristically (taking shortcuts) in making decisions (Tversky and Kahneman, 1974). The heuristic component may explain overconfident behaviour of investors in the stock market.

Overconfidence is one of the indicators that can be measured by trading volume. (Foster et al., 1984), while Grossman and Stiglitz (1980) state that trading occurs because of differing beliefs between investors on real values.

2.4 Magnitude of under-pricing

Under-pricing of IPOs is a common symptom in many stock markets. Some researchers have attempted to explain the occurrence of under-pricing. Beatty and Ritter (1986) and Beatty (1989) say that under-pricing is driven by information asymmetry between company owners and underwriters. Examining the relationship between underwriter and under-pricing, Loughran and Ritter (2002) state that there is a negative relationship between UNWRI and under-pricing. Dimovski et al. (2011) say that a high UNWRI is likely to lead to greater under-pricing (high). Carter and Manaster (1990) note that under-pricing is a result of uncertainty of price in the secondary market. Beatty and Ritter (1986) say that under-pricing is a result of ex-ante uncertainty at IPO.

2.5 Earnings management

DA is performed as a result of opportunities provided by organiser institutions such as the Financial Accounting Standards Board (FASB) in the USA and in Indonesia. The opportunity arises since there is flexibility to choose an accounting method. The opportunity encourages company management to obtain certain individual profits (Schipper, 1989).

Healy and Wahlen (1999) conclude that some managers are motivated to increase earnings prior to initial stock offering with the objective of increasing the initial stock-offering price. With respect to IPO, it is often true that DA is performed for the purpose of reporting high earnings to confuse investors. Nevertheless, some researchers think otherwise and state that DA has no opportunistic context (Fan, 2007), and that it is conservative (Ball and Shivakumar, 2008) and non-aggressive (Chang et al., 2010).

Acknowledging this tension, we make the following hypotheses:

H1 Companies tend to perform earning management to seek income maximisation prior to an IPO.

H2 There is a negative relationship between DA and under-pricing at the time of an IPO. The higher or more aggressive the DA, the smaller the under-pricing of the IPO's company stocks.

2.6 Underwriter reputation

The IPO process is inseparable from the role of the underwriter in creating a bridge between the issuer and the investors or the prospective investors. The underwriter takes advantage of information in possession to set a price that minimises their risk in the event that not all stocks are sold. In such a situation, this price is lower than its initial stock offering. The bigger the uncertainty of the reasonableness of the issue price, the bigger is the responsibility of the underwriter to establish the price. Accordingly, the bigger the uncertainty faced by the underwriter, the higher is the level of under-pricing:

So, research hypothesis (H3) is as follows:

H3 There is negative relationship between UNWRI and under-pricing. The higher the UNWRI, the smaller is the under-pricing of IPO's company stocks.

2.7 Auditor reputation

Carter and Manaster (1990) state that under-pricing is a consequence of an uncertain price on the secondary market. Beatty (1989) says that a high-quality auditor reduces uncertainty about initial return. Utilising the service of an auditor with high reputation reassures investors that the financial reports describe the actual state of the company. Certainty will prevent or constrain the occurrence of under-pricing:

H4 There is a negative relationship between auditor reputation (AUDI) and under-pricing of an IPO's company stocks; the higher the auditor reputation, the smaller is the under-pricing.

2.8 IPO stocks price stabilisation

One of the main functions of an underwriter at the time of an IPO is to ensure that the stock's price does not decline beyond its initial price in the secondary market by implementing a price stabilisation strategy (Ruud, 1993; Hanley et al., 1993). Further, Asquith et al. (1998) detect price stabilisation immediately after the IPO. There are several reasons for price stabilisation, e.g., rewarding informed investors (Benveniste and Spindt, 1989) and ensuring the credibility of the underwriter.

In the stock market, there are many investors involved with all kinds of characters such as overconfidence that will affect trading volume. Hence we may hypothesise that:

H5 The magnitude of under-pricing has a positive influence on the stock trading volume during the stabilisation period.

3 Research method

3.1 Data and research sample

Our data came from companies that issued IPOs in the Jakarta Stock Exchange (Bursa Efek Jakarta – BEJ) or Indonesia Stock Exchange (Bursa Efek Indonesia – BEI) in the period 2004 until 2013. The data were of the cross-sectional type. We used sample pairs for comparison. A company in operation for ten years on the stock market can be of the same scale as the IPO company. Sample pairs enabled the control of the comparison of the DA action performed by IPO Company.

3.2 Research and measurement variables

3.2.1 Research variables

The variables used in this research included independent as well as dependent variables. Two equation-based models were examined. In Model I, DA, UNWRI, and AUDI were the independent variables, while the under-pricing magnitude (UNPRIC) was the dependent variable. In Model II, the UNPRIC was taken to be the independent variable, and the initial stock trade volume during the stabilisation period (TRADE) was taken as the dependent variable.

We introduced several control variables size or log of total asset (SIZE), age of company (AGE), growth of sales (GRO), and percentage of financial leverage (LEV). We assumed these to behaving an influence on under-pricing and on stock trade volume during the stabilisation period.

3.2.2 DA measurement

We first applied the modified Jones model (Dechow et al., 1995) to establish whether or not the earnings were managed.

3.2.3 UNWRI measurement

Our measurement of UNWRI used the ranking established by Carter and Manaster (1990), which involved comparing trade transactions against the total value assessed by the underwriter. UNWRI is a dummy variable with value (1) for underwriters with high reputation and (0) for those with low reputation.

3.2.4 AUDI measurement

AUDI was used as another dummy variable to determine who had reputation, and who did not by looking at KAP (Kantor Akuntan Publik – Public Accounting Firm) records listing which is affiliated with the big four, and by ranking the total value of the IPO. Further ranking involved comparing the total trade transaction values.

3.2.5 Measuring the UNPRIC

Under-pricing is measured and tabulated by year and industry (Nagata, 2013; Dimovski et al., 2011; Chang et al., 2010; Chen et al., 2004).

3.2.6 Measuring the initial stock trading volume

Initial stock trade volume on stock market (initial and secondary market) is the amount of stock sales transaction during the stabilisation period. This is a dependent variable and is represented by the logarithm (log) of the average sales transaction for the 45 days since it was first traded in the secondary market.

3.3 Research model

This research used two double regression models utilising the ordinary least squares (OLS) method (Models I and II, respectively):

$$\begin{aligned} \text{UNPRIC} = {} & a_1 + b_{11}\ \text{DA} + b_{12}\ \text{UNWRI} + b_{13}\text{AUDI} + b_{14}\ \text{SIZE} \\ & + b_{15}\ \text{AGE} + b_{16}\ \text{GRO} + b_{17}\text{LEV} + e_{1i} \end{aligned}$$

$$\begin{aligned} \text{TRADE} = {} & a_2 + b_{21}\ \text{UNPRIC} + b_{22}\ \text{SIZE} + b_{23}\ \text{AGE} \\ & + b_{24}\ \text{GRO} + b_{25}\ \text{LEV} + e_{2i} \end{aligned}$$

3.4 Examination of hypotheses

The first examination of each hypothesis involved using an independent one-sample t-test (Wonnacott, 1981) to examine the tendency of DA performed prior to IPO process. This helped determine the magnitude of t-measure value that could then be compared against the appropriate values in the t-table to determine whether DA actually happened prior to IPO.

Further examination revealed whether DA prior to IPO was due to earnings management by increasing income (income maximisation) or by increasing cost (cost maximisation). Still further examination determined whether earnings management was performed by a non IPO company (a co-company). Second, third, fourth and fifth examinations of Hypotheses H2, H3, H4 and H5 use regression analysis OLS to show the relationships between the independent and dependent variables. Generally, classic assumption examinations must be performed in advance, in case an OLS analysis is required in the examination of any hypothesis.

4 Discussions

4.1 Analysis result of DA prior to IPO

From examining the results of Hypotheses 1 (H1) we could conclude that companies do perform DA with income maximisation prior to IPO. This conclusion is in conformity with results from Teoh et al. (1998) and DuCharme et al. (2004) and supports the managerial opportunism hypothesis made by Nagata (2013).

4.2 Results concerning the independent variable effect on UNPRIC

From the analysis of the independent variable effect on under-pricing we may conclude that DA performed prior to IPO has no influence on under-pricing. This result has failed to support Hypothesis 2 (H2). It is possible that investors and prospective investors generally do not know or do not understand that DA is important information, and it is possible that they consider only the information made available by the underwriter and auditor. This research result is inconsistent with the findings of DuCharme et al. (2004) and Ljungqvist (2007).

We may also conclude that the higher the underwriter's reputation, the smaller is the under-pricing of an IPO. Note that, in conformity with the research performed by Loughran and Ritter (2002) and Dimovski et al. (2011), this result supports Hypothesis 3 (H3). We also found that AUDI has a negative influence on under-pricing. In conformity with the research by Beatty (1989), this conclusion supports Hypothesis 4 (H4).

From the analytical results on the effect of the control variable on under-pricing we conclude that the size has influence on UNPRIC although at a low level of significance. Age, growth, and leverage level have no influence on under-pricing. It follows from this that age, growth, and leverage level are unimportant, they have no influence on under-pricing.

4.3 Independent variable effect on stock trading volume during stabilisation period

Our analysis of under-pricing's effect on initial stock trading volume in the course of stabilisation period revealed a positive influence. The logic, as disclosed by Logue et al. (2002), is that in the course of the 45-day stabilisation period in initial stock trade, when initial stock is less underpriced, or is overpriced, there will be stabilisation activity by the underwriter, leading to a positive excess return which could trigger the interest of investors and prospective investors in trading, thus increasing stock trade volume.

The control variables age, growth and leverage had no influence on initial stock trade volume. Extending this observation, we may say that unimportant information has no effect on the market and has no influence on under-pricing and initial stock trade volume.

5 Conclusions and suggestions

5.1 Conclusions

In this paper, we have examined several factors influencing the occurrence of under-pricing in IPOs on the stock market UNWRI, DA, and auditor reputation. While most previous researchers had set out to prove that, prior to an IPO, DA maximises income, we have revealed that DA prior to company IPO does result in income maximisation. We have also concluded that DA performed prior to IPO has no influence on under-pricing, while underwriter and auditor reputations negative and significant influence under-pricing. We have also shown that under-pricing has a positive and significant influence on initial stock trade volume during the stabilisation period.

5.2 Suggestions

This research has focused IPO under-pricing and information asymmetry; problems between a company, its underwriter, and investors and prospective investors; and on the behaviour of investors, represented by initial stock trade volume.

It is hoped that this research has inspired further research on IPO under-pricing and overpricing, while taking note of the following:

Regulation is expected to create a healthy trade atmosphere and promote efficiency by controlling underwriters' existence and activity, and by controlling the behaviour of other parties related to the IPO. Regulation is also expected to increase the availability of all information covering financial and non-financial details, that is, material facts required by investors and prospective investors in assessing an IPO.

Finally, for the financial reports on IPOs to be trustworthy, regulators are also expected to give would be auditors a reliable reputation ranking.

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